

CLAIMS:

1. A ring binder mechanism for binding the sheets of loose leaves, the mechanism comprising:

a elongated plate that extends longitudinally;

hinge plates supported by said elongated plate for pivotal rotating relative to the elongated plate;

rings for clasp said sheets of loose leaves, each of the rings comprising a pair of half ring elements, and the pair of half ring elements being attached on said hinge plates and being movable between a closed position and an opened position via said hinge plates;

wherein nesting portions of free ends of said pair of half ring elements form a nesting configuration with a concave portion and a convex portion that are symmetrical about an axis line of the cylindrical rods of the ring elements, so that when the pair of half ring elements are in the closed condition, the nesting portions of said pair of half ring elements are aligned to each other and nested together tightly.

2. A ring binder mechanism according to claim 1, wherein the nesting portion with a centrally convex portion is formed in a free end of one half ring element of said pair of half ring elements, and the nesting portion with a centrally concave portion is formed in a free end of the other engaging half ring element, said convex nesting portion has an annular conical surface, said concave nesting portion has a conical hole that is formed from its external end surface, a diameter of the conical hole on the external end surface is smaller than that of the cylindrical rod of the half ring element, a cone angle of said conical hole is smaller than that of the annular conical surface of the centrally protruding outwards nesting portion, when the half ring elements are in the closed condition, the connecting portion between the external end surface of the concave nesting portion and the conical hole thereof engages with the annular conical surface of the convex nesting portion, so that the centrally convex nesting portion is nested in the centrally concave nesting portion.

3. A ring binder mechanism according to claim 1, wherein the nesting portion with a centrally convex portion is formed in a free end of one half ring element of said pair of half ring elements, and the nesting portion with a centrally concave portion is formed in a free end of the other engaging half ring element, said convex nesting portion has a protruding portion, the protruding portion is connected to a surface of the cylindrical rod of the half ring element via an annulus internal end surface, a diameter of the protruding portion on the internal end surface is smaller than that of the

cylindrical rod of the half ring element, said concave nesting portion has a opening that is formed from its external end surface, a diameter of the opening on the external end surface is smaller than that of the cylindrical rod of the half ring element and slightly larger than that of said protruding portion on its internal end surface, when the half ring elements are in the closed condition, the external end surface of the concave nesting portion and the internal end surface of convex nesting portion form a surface-engagement, so that the convex nesting portion is nested in the concave nesting portion.

4. A ring binder mechanism according to claim 3, wherein the protruding portion of said convex nesting portion has a conical shape, the opening of said concave nesting portion has a conical hole that is formed from its external end surface and an internal cylindrical hole that is connected to said conical hole.

5. A ring binder mechanism according to claim 4, wherein the protruding portion of said convex nesting portion has a shape that consists of a cylindrical tip and an arc-shaped annular conical base portion, the opening of said concave nesting portion has a conical hole that is formed from its external end surface and an internal cylindrical hole that is connected to said conical hole.

6. A ring binder mechanism according to claim 3, wherein the protruding portion of said convex nesting portion has a cylindrical shape, the opening of said concave nesting portion has a shape of an internal cylindrical hole.

7. A ring binder mechanism according to claim 1, wherein the nesting portion with a centrally convex portion is formed in a free end of one half ring element of said pair of half ring element pairs, and the nesting portion with a centrally concave portion is formed in a free end of the other engaging half ring element, said convex nesting portion has a protruding conical portion, the conical portion is connected to a surface of the cylindrical rod of the half ring element via an annulus internal end surface, a diameter of the conical portion on the internal end surface is smaller than that of the cylindrical rod of the half ring element, said concave nesting portion has a conical hole that is formed from its external end surface, a diameter of the conical hole on the external end surface is smaller than that of the cylindrical rod of the half ring element and substantially equal to that of said protruding conical portion on the internal end surface, when the half ring elements are in the closed condition, the external end surface of the concave nesting portion and the internal end surface of the convex nesting portion form a surface-engagement, and the conical portion of the convex nesting portion and the conical hole of the concave nesting portion form a engagement, so that the concave nesting portion is nested in the convex nesting portion.

8. A ring binder mechanism according to claim 1, wherein the pair of half ring

elements of said ring binder mechanism form a circular ring.

9. A ring binder mechanism according to claim 1, wherein one half ring element of said pair of half ring elements of said ring binder mechanism has a straight side.

10. A ring binder mechanism according to claim 1, wherein two, three, four or more rings are provided in said ring binder mechanism.

11. A ring binder mechanism according to claim 1, wherein said rings are made of metal material, and the metal material can be steel.

12. A ring binder mechanism according to claim 1, wherein said rings are made of plastic material.

13. A ring binder mechanism according to claim 1, wherein said rings are formed integrally with said hinge plates.